

WHAT IS CLAIMED IS:

1. An associating information management system for associating various types of information and for managing the information, said system comprising:

5 a relationship management table for storing parent-child relationship in identification information of each type of information; and

retrieval processing means for performing retrieval processing of various types of information from parent to  
10 child and from child to parent by association of the relationship management table in the information and the scope as designated.

2. An associating information management system according to claim 1, wherein said various types of  
15 information are managed by a member management table where member data comprising said identification information and detailed information are stored.

3. An associating information management system according to claim 2, wherein said detailed information  
20 comprises a classification information for classifying the members.

4. An associating information management system according to claim 3, wherein said classification  
information comprises type, rank, classification, and job  
25 type.

5. An associating information management system according to claim 2, wherein said detailed information comprises various types of information including FAT

information, address recorded in FAT, file type, directory pass, file name, scope of selection, object, attribute and information having attribute.

6. An associating information management system  
5 according to claim 1, wherein said identification information comprises ID, FAT information, address recorded in FAT, file type, directory pass, file name, scope of selection, object, attribute, or information having attribute.

10 7. An associating information management system according to claim 1, wherein said relationship management table comprises information of mutual associating direction and degree of relationship.

8. An associating information management system for  
15 managing by associating various types of information, said system comprising:

a relationship management table for storing parent-child relationship in identification information of each information;

20 a member management table for storing said identification information and said various type of information;

input processing means for performing input, setting and indication of the data;

25 associating information management means for retrieving various types of information from parent to child and from child to parent by association of the relationship management table in the information and the

scope as designated by said input processing means and for processing various types of information stored in the member management table; and

output processing means for performing output  
5 processing of the data processed by said associating information management means.

9. An associating information management system according to claim 8, wherein said input processing means associates one or a plurality of data stored in said member  
10 management table with one or a plurality of different types of data under a given condition, and stores the result of the association in said relationship management table.

10. A program for associating information management for associating and managing various types of information  
15 by using a relationship management table for storing the result of said association of parent-child relationship in identification information of various types of information, whereby there are provided a function to carry out retrieval of various types of information from parent to  
20 child by the association of the relationship management table and a function to perform retrieval of various types of information from child to parent.

11. A program for associating information management for associating and managing various types of information  
25 by using a relationship management table for storing the result of said association of parent-child relationship in identification information of various types of information, whereby the program carries out a function to select one or

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a plurality of parents or one or a plurality of children under a selection condition as designated by said various types of information, a function to associate said selected one or a plurality of parents and said one or a plurality of children by said identification information and to store in the relationship management table, a function to retrieve various types of information from parent to child by association of the relationship management table, and a function to retrieve various types of information from child to parent.

12. A recording medium for associating information management to associate and manage various types of information, said recording medium being able to read the data by computer and used to record at least:

15 a relationship management table for storing association of parent-child relationship in identification information of various types of information; and

20 a retrieval processing program for performing retrieval processing of various types of information from parent to child and from child to parent by association of the relationship management table in the designated information and scope.

13. A recording medium for associating information management to manage various types of information by associating, said recording medium being able to read by computer and at least comprising:

a relationship management table for storing association of parent-child relationship by identification

information of various types of information;

a member management table for storing said identification information and said various types of information;

5 an input processing program for inputting, setting, and indicating the data;

an associating information management program for retrieving various types of information from parent to child and from child to parent by association of said relationship management table in said designated information and scope and for processing various types of information stored in said member management table; and

10 an output processing program for performing output processing of the data processed by said associating information management program.

14. An associating information management system provided with database, said database comprising;

a member management table for storing member information of individuals and organizations including name or organization name, address, telephone number, etc.; and

20 a relationship management table for defining relationship between a member registered in the member management table and another member related to said member by parent-child relationship and for entering classification code to indicate type of relationship and priority rank of the relationship.

15. An associating information management system according to claim 14, wherein there is provided a

classification table for defining which relationship the classification code indicates and which priority rank the classification code indicates in addition to the relationship management table.

5        16. An associating information management system according to claim 14 or claim 15, wherein there is provided an area code for statistical data preparation and for classification and assignment of the registered member in the registration items in the member management table.

10        17. An associating information management system, comprising:

         a member management table for storing member information of individuals and organizations including name or organization name, address, telephone number, etc.;

15        said system records relationship record defining relationship between a member registered in the member management table and another member relating to said member by parent-child relationship, said system being provided with a database, which comprises a relationship management  
20        table for recording classification code indicating type of the relationship and priority rank of the relationship, and when the member is designated as a reference person, a member in parent-child relationship with said member is extracted and displays parent member, child member and  
25        grandchild member together with the reference person as a list, said system further comprising means for executing the following steps of:

         (1) making a code of a member selected in a member

list extracted by designating a specific condition as a reference person code ("reference person CIF");

(2) acquiring information of the reference person from the member management table based on the reference person CIF and of storing the information in a reference person display area;

(3) extracting codes of all members in parent relationship of the reference person from the relationship management table ("parent CIF") and classification thereof based on the reference person CIF, acquiring each information from the member management table and priority rank of classification from the classification table, and storing the information in a parent member list display area from a member with higher priority rank;

(4) extracting codes of all members in child relationship of the reference person from the relationship management table ("child CIF") and classification thereof based on the reference person CIF, acquiring each information from the member management table and priority rank of classification from the classification table, and storing the information in a child member list display area from a member with higher priority rank;

(5) extracting codes of all members in child relationship of a child member at the uppermost part of the child member list display area ("grandchild CIF") from the relationship management table based on a child CIF at the uppermost part of the child member list display area and classification thereof, acquiring each information from the

member management table and priority rank of classification from the classification table, and storing the information in a grandchild member list display area from a member with higher priority rank;

5 (6) displaying the display area;

(7) judging whether or not the user has selected a member other than the uppermost member in the child member list display area (If selected, advance to Step (8). If not selected, advance to Step (9));

10 (8) extracting codes of all members in child relationship of a child member selected in the child member list display area and classification thereof from the relationship management table based on the selected child CIF, acquiring each information from the member management  
15 table, and priority rank of classification from the classification table, and storing and displaying again the information in a grandchild member list display area from a member with higher priority rank;

(9) judging whether a reference person change button  
20 is pressed or not (If pressed, advance to Step (10). If not pressed, wait for the next instruction.); and

(10) making a code of a member as a reference person CIF who was selected by the user from each of the parent member list display area, the child member list display  
25 area, and the grandchild member list display area (Return to Step (2).).

18. An associating information management system, comprising:



a member management table for storing member information of individuals and organizations including name or organization name, address, telephone number, etc.;

said system records relationship record defining  
5 relationship between a member registered in the member management table and another member relating to said member by parent-child relationship, said system being provided with a database, which comprises a relationship management table for recording classification code indicating type of  
10 the relationship and priority rank of the relationship, and a member in parent-child relationship is extracted by a member code set in the reference person, and degrees of relatives are displayed in a tree view in the order of relatives of closer degree, said system further comprising  
15 means for executing the steps of:

(1) acquiring information of the reference person member of the member management table based on the reference person CIF, and displaying the information in a tree view area;

20 (2) selection of the first degree relatives

(2-1) extracting a parent member from the relationship management table based on the reference person CIF, and additionally displaying the information under the reference person with one member in one step in the second column of  
25 the tree view area in the order of priority rank;

(2-2) extracting a child member from the relationship management table based on the reference person CIF, and additionally displaying the information under the parent

member with one member in one step in the second column of the tree view area in the order of priority rank, whereby an abbreviation symbol is added after the name if a member with the same CIF is already displayed in the tree view;

5 (3) selection of the second degree relatives;

(3-1) performing the following processing in the order from higher position on members of the first degree displayed in the second column:

10 (3-2) extracting a parent member from the relationship management table based on the first degree relative CIF, and inserting and displaying the information between the corresponding first degree member and the next first degree member with one member in one step in the third column of the tree view area in the order of priority rank, whereby  
15 "selection of the second degree relatives" is not carried out if the member of two degrees before (the reference person) in direct line is the same member;

(3-3) "selection of the second degree relatives" is not carried out if an abbreviation symbol is attached to a  
20 member in the corresponding step of the first degree;

(3-4) adding an abbreviation symbol after the name if a member with the same CIF is already displayed in the tree view;

25 (3-5) extracting a child member from the relationship management table based on the first degree relative CIF, and inserting and displaying the information between the corresponding first degree member and the next first degree member with one member in one step in the third column of

the tree view area in the order of priority rank, whereby "selection of the second degree relatives" is not carried out if the member of two degrees before (the reference person) in direct line is the same member;

5       (3-6) "selection of the second degree relatives" is not carried out if an abbreviation symbol is attached to a member of the corresponding step of the first degree;

10       (3-7) adding an abbreviation symbol after the name if a member with the same CIF is already displayed in the tree view area;

      (4) selection of n-th degree relatives ( $n = 3$ )

      (4-1) performing the following processing respectively in the order from higher position on n-1-th degree member displayed in n-th column;

15       (4-2) extracting a parent member from the relationship management table based on n-1-th degree relative CIF, and inserting and displaying the information between the member of the corresponding n-1-th degree and the next n-1-th degree member with one member in one step in n+1-th column  
20 of the tree view area in the order of priority rank, whereby "selection of n-th degree relatives" is not carried out if a member of two degrees before (n-2-th degree relative) in direct line is the same member;

25       (4-3) "selection of n-th degree relative" is not carried out if an abbreviation symbol is attached to a member of the corresponding step of n-1-th degree;

      (4-4) adding an abbreviation symbol after the name if a member with the same CIF is already displayed in the tree

view area;

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(4-5) extracting a child member from the relationship management table based on n-1-th degree relative CIF, and inserting and displaying the information between the

5 corresponding n-1-th degree member and the next n-1-th degree member with one member in one step in n+1-th column of the tree view area in the order of priority rank, whereby "selection of n-th degree relative" is not carried out if a member of two degrees before (n-2-th degree

10 relative) in direct line is the same member;

(4-6) (selection of n-th degree relative) is not carried out if an abbreviation symbol is attached to a member in the corresponding step of n-1-th degree;

(4-7) adding an abbreviation symbol after the name if

15 a member with the same CIF is already displayed in the tree view area;

repeating Step (4) until "n" reaches a predetermined number by progressively increasing "n" by one in Step (4) after the procedure of (5) above, and completing the

20 processing if "n" reaches the predetermined number.

19. An associating information management system, comprising:

a member management table for storing member information of individuals and organizations including name

25 or organization name, address, telephone number, etc.;

said system records relationship record defining relationship between a member registered in the member management table and another member relating to said member

by parent-child relationship, said system being provided with a database, which comprises a relationship management table for recording classification code indicating type of the relationship and priority rank of the relationship, and  
5 said system extracts up to any degree of relative as desired and displays whether a relationship route is made up using member codes of two members as set to the reference person, said system further comprising means for executing the steps of:

10 (1) setting one of the two members for tracing the relationship as a regular member, and the other as a sub-member, storing a setting condition to trace whether the sub-member is connected with the regular member, and initializing array area in the memory for temporarily  
15 storing retrieval result;

(2) storing the setting condition as to up to which degree should be searched at the furthest or whether the shortest route should be searched or all routes should be searched as designated by the user when processing is  
20 performed;

(3) extracting the first degree member in parent-child relationship of the regular member;

(3-1) judging whether ia-th ( $i = 1$  to  $n$ ) member is a sub-member or not among the number of records "na" of the  
25 extracted first degree member;

(3-1-1) if it is a sub-member, executing the processing of Step (3-1) to the record of the next first degree member by storing the route from the regular member

in array area of the memory;

(4) if it is not a sub-member, extracting the second degree member in parent-child relationship of ia-th member of the first degree;

5 (4-1) judging whether ib-th ( $i = 1$  to  $n$ ) member is a sub-member or not among the number of records "nb" of the second degree extracted;

(4-1-1) if it is a sub-member, executing the processing of Step (4-1) to the record of the next second  
10 degree by storing the route from the regular member in array area of the memory;

(4-2) if it is not a sub-member, judging whether the same member as ib-th member of the second degree is present at higher position in the route or not;

15 (4-2-1) if it is present at higher position, executing the processing of Step (4-1) to the record of the next second degree member by interrupting the processing;

(5) if it is not present at higher position, extracting the third degree member in parent-child  
20 relationship of ib-th member of the second degree;

(5-1) judging whether ic-th ( $i = 1$  to  $n$ ) member is a sub-member or not among the number of records "nc" of the third degree extracted;

(5-1-1) if it is a sub-member, executing the  
25 processing of Step (5-1) to the record of the next third degree member by storing the route from the regular member in array area of the memory;

(5-2) if it is not a sub-member, judging whether the

same member as ic-th member of the third degree is not present at higher position in the route or not;

(5-2-1) if it is present at higher position, interrupting the processing and executing the processing of  
5 Step (5-1) to the record of the next third degree member by interrupting the processing;

(6) if it not present at higher position, extracting the fourth degree member in parent-child relationship of ic-th member of the third degree;

10 (7) repeating the procedure by progressively increasing the value up to the degree of the number as set in advance, and performing the following processing in the final degree member:

(7-1) judging whether ix-th ( $i = 1$  to  $n$ ) member is a  
15 sub-member or not among the number of records "nx" of the final degree extracted;

(7-1-1) if it is a sub-member, storing the route from the regular member in array area of the memory, and advancing to the next record of the final degree;

20 (7-2) if it is not a sub-member, advancing to the next record of the final degree. If the record of the final degree is completed up to "n", performing processing by progressively increasing by one the number of records of the degree one step before;

25 (7-3) if the number of recording of the degree one step before is completed up to "n", performing processing by progressively increasing by one the number of records of the degree one step before;

(8) performing this procedure until the number of records of all degrees is completed;

(9) rearranging retrieval results stored in array area of the memory from the member of lower degree in the route;

5 (10) displaying the first of the retrieval results in the tree view area; and

(11) displaying the route selected by the user among the retrieval results in the tree view area if the user designates the change of the retrieval result display in  
10 the pulldown list box.

20. An associating information management system for associating various types of information and for managing the information, said system at least comprising:

a relationship vector table for storing relationship  
15 of said various types of information, direction of said relationship, and position time series information; and

retrieval processing means for performing retrieval processing for association based on the relationship stored in said relationship vector table, direction of said  
20 relationship and position time series information, and for performing output processing of the relationship map.

21. An associating information management system according to claim 20, wherein there is further provided a relationship management table for storing parent-child  
25 relationship between said various types of information, and said retrieval processing means outputs a relationship map to display transition of relationship along said position time series of said various types of information as said



relationship map and also outputs a relationship pedigree displaying connection of said various type of information in form of chains.

22. An associating information management system  
5 according to claim 21, wherein said various types of information are under management by a member management table for storing member data consisting of identification information and detailed information.

23. An associating information management system  
10 according to claim 22, wherein said detailed information contains assortment information for assorting members.

24. An associating information management system according to claim 23, wherein said assortment information includes type, rank, classification, and job type.

25. An associating information management system  
15 according to claim 22, wherein said detailed information comprises FAT information, address recorded in FAT, file type, directory pass, file name, scope of selection, object, attribute, or information having attribute.

26. An associating information management system  
20 according to claim 22, wherein said identification information comprises ID, FAT information, address recorded in FAT, file type, directory pass, file name, scope of selection, object, attribute, or information having  
25 attribute.

27. An associating information management system according to claim 21, wherein said relationship management table comprises information of mutual associating direction

and degree of relationship.

28. A program for associating information management  
for associating and managing various types of information  
by using a relationship vector table for storing  
5 relationship between said various types of information,  
direction of said relationship and position time series  
information, retrieval processing for association is  
performed according to the relationship, direction of the  
relationship and the position time series information  
10 stored in said relationship vector table, and output  
processing of the relationship map is carried out.

29. A recording medium for associating information  
management and readable by computer and for managing  
various types of information by association, said recording  
15 medium records a relationship vector table for storing  
relationship between said various types of information,  
said direction of relationship and said position time  
series information, and a retrieval processing program for  
performing retrieval processing of association based on the  
20 relationship, direction of the relationship and the  
position time series information stored in said  
relationship vector table and for carrying out output  
processing of the relationship map.

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